ADDITIONAL NOTES ON THE *ERIOCAULACEAE*. XCVIII

Harold N. Moldenke

SYNGONANTHUS PROLIFER Alv. Silv.

Additional bibliography: Mold., Phytologia 38: 26--27. 1977; Mold., Biol. Abstr. 65: 3719. 1978; Mold., Phytol. Mem. 2: 167 & 625. 1980; Mold. in Harley & Mayo, Toward Checklist Fl. Bahia 77. 1980.

Recent collectors describe this species as a slender herb, 10--20 cm. tall, the leaves pale- or mid-green, the "stems" [peduncles] mid-green, the heads "pale-fawn", the involucral bractlets pale-brown or whitish-straw, and the florets whitish. They have found it growing in a region of "sandstone rocks with open sand in flatter areas, open scrub in exposed sites with scattered low woodland in shelter of rocks", in an area of "sandstone, metamorphic and quartzite rock outcrops with associated marsh and damp flushes", and in a region of "waterworn horizontally bedded sandstone at soil surface, with damp sand, sedge marsh, exposed rock and waterfalls, the vegetation consisting of open scrub to closed low woodland in drier areas", at 900--1500 m. altitude, in both flower and fruit in February and March.

Additional citations: BRAZIL: Bahia: *Harley, Mayo, Storr, Santos, & Pinheiro in Harley 19258* (Ld, N), *19325* (Ld, N), *19554* (Ld, N); *Mattos Silva & Brito 955* (Ld). Minas Gerais: *W. R. Anderson 8940* (W--2755401). MOUNTED ILLUSTRATIONS & CLIPPINGS: Alv. Silv., Fl. Mont. 1: 374--375, pl. 238. 1928 (Ld, N, W).

SYNGONANTHUS PROLIFER var. *PARVUS* Mold.

Additional bibliography: Mold., Phytologia 38: 27. 1977; Mold., Phytol. Mem. 2: 167 & 625. 1980.

SYNGONANTHUS PTEROPHYLLUS Alv. Silv.

Additional bibliography: Mold., Phytologia 38: 28. 1977; Mold., Phytol. Mem. 2: 167 & 625. 1980.

Citations: MOUNTED ILLUSTRATIONS & CLIPPINGS: Alv. Silv., Fl. Mont. 1: 379--380, pl. 241. 1928 (Ld, N, W).

SYNGONANTHUS PULCHELLUS Mold.

Additional bibliography: Mold., Phytologia 42: 204. 1979; Mold., Phytol. Mem. 2: 167 & 625. 1980.

Additional citations: BRAZIL: Minas Gerais: *Anderson, Stieber, & Kirkbride 35843* (W--2709885--isotype). MOUNTED ILLUSTRATIONS: Mold., Phytologia 27: 72, fig. 4. 1973 (Ld).

SYNGONANTHUS PULCHER (Körn.) Ruhl.

Additional bibliography: Mold., Phytologia 38: 28--29 & 43. 1977; Mold., Biol. Abstr. 65: 3719. 1978; Mold., Phytol. Mem. 2: 167 & 625. 1980.

Additional citations: BRAZIL: Minas Gerais: *G. Gardner 5265* (W--1067053--isotype). MOUNTED CLIPPINGS: Körn. in Mart., Fl. Bras. 3 (1): 452. 1863 (N, W).

SYNGONANTHUS PULVINELLUS Mold.

Additional bibliography: Mold., Phytologia 38: 29. 1977; Angely, S. Amer. Bot. Bibl. 2: 675. 1980; Mold., Phytol. Mem. 2: 167 & 625. 1980.

SYNGONANTHUS QUADRANGULARIS Alv. Silv.

Additional bibliography: Mold., Phytologia 38: 29. 1977; Mold., Phytol. Mem. 2: 167 & 625. 1980.

Citations: MOUNTED ILLUSTRATIONS & CLIPPINGS: Alv. Silv., Fl. Mont. 1: 333--334, pl. 210. 1928 (Ld, N, W).

SYNGONANTHUS RECLINATUS (Körn.) Ruhl.

Additional bibliography: Mold., Phytologia 38: 29--30. 1977; Mold., Biol. Abstr. 65: 3719. 1978; Mold., Phytol. Mem. 2: 167 & 625. 1980.

Additional citations: BRAZIL: Goiás: *Duarte 13954* [Herb. Brad. 60826] (Ld); *G. Gardner 3488* (W--936281--isotype).

SYNGONANTHUS REFLEXUS Gleason

Additional bibliography: Mold., Phytologia 42: 204--205 (1979) and 46: 155. 1980; Mold., Phytol. Mem. 2: 112, 120, 168, & 625. 1980.

Recent collectors describe this plant as a very common herb, 15--40 cm. tall, the inflorescences dry, the flowering heads white, and the "flowers cream". They have found it growing on quartzite-based mesas, in very wet spots on white-sand campinas, and "frequent throughout the savannas", 35-335 m. altitude, in flower in April, and both in flower and fruit in January, February, and June to August. Huber refers to it as "common on all savannas" and as a "hierba arrosetada común en toda la sabana anegadiza". Calderón and his associates make the remarkable assertion "plants ash-white color with golden hairy inflorescences" -- certainly an error in observation.

The *Maguire, Wurdack, & Keith 41759, Murça Pires, Black, Wurdack, & Silva 6182, 6462, 6470, & 6553,* and *Rosa & Santos 1993,* previously cited as typical *S. reflexus,* are now considered by me as representing its var. *longifolius* Mold., while *Steyermark 75854* is *S. xeranthemoides* var. *tricostatus* (Gleason) Mold.

Additional citations: COLOMBIA: Guainía: *García-Barriga 20833* (W--2844154); *Maguire, Wurdack, & Keith 41845* (W--2279329). Vaupés: *Schultes, Baker, & Cabrera 18178* (W--2198896); *Schultes & Cabrera 14229* (W--2198866), *14348* (W--2198870), *19172* (Ld, W--2198915), *19948* (W--2198931), *19990* (W--2198933). VENEZUELA: Amazonas: *Fariñas, Velasquez, & Medina 450* (N); *O. Huber 1078* (Ld), *2387* (Ld), *2418* (Ld), *2450* (Ld), *2529* (Ld), *2552* (Ve), *2644* (Ld), *2670* (Ld), *3406* (Lc), *3851* (Lc), *3875* (Lc), *3925* (Ve); *Huber & Medina 5756* (Ld); *Huber & Tillett 2910* (Ld), *3060* (Ld),

5458 (Ve), *5473* (Ld); *Huber, Tillett, & Davidse 3658* (Ld), *3683* (Ve); *Maguire & Wurdack 35655* (W--2168956); *Maguire, Wurdack, & Bunting 36352* (W--2168973), *36675* (W--2168981); *Maguire, Wurdack, & Maguire 41681* (W--2279300); *J. A. Steyermark 57816* (W--1901738); *Wurdack & Adderley 42868* (W--2320881). BRAZIL: Amazônas: *Calderon, Monteiro, & Guedes 2558* (Ld, W--2931219), *2672* (Ld, W--2931233); *Rosa & Lira 2281* (N).

SYNGONANTHUS REFLEXUS var. *LONGIFOLIUS* Mold., Phytologia 46: 155. 1980.

Bibliography: Mold., Phytologia 46: 155. 1980; Mold., Phytol. Mem. 2: 120, 168, & 625. 1980.

Recent collectors describe this plant as an "arbuste de 60 cm., inflorescencia branca" and report it locally abundant on scrub savannas and wet savannas, in "floresta com manchas de serrado, solo arenito e quartzito", at 120--425 m. altitude, in both flower and fruit in May, October, and December. Most of the collections cited below were previously cited by me in earlier installments of these notes as typical *S. reflexus* Gleason before the validity of the present variety was established.

Citations: VENEZUELA: Amazonas: *Maguire, Wurdack, & Keith 41759* (B, B, Mu, N, S). BRAZIL: Mato Grosso: *Rosa & Santos 1993* (N). Pará: *Murça Pires, Black, Wurdack, & Silva 6182* (N), *6462* (N--type), *6470* (N), *6553* (N).

SYNGONANTHUS RETRORSO-CILIATUS Alv. Silv.

Additional bibliography: Mold., Phytologia 38: 31--32. 1977; Mold., Phytol. Mem. 2: 168 & 625. 1980.

Citations: MOUNTED ILLUSTRATIONS & CLIPPINGS: Alv. Silv., Fl. Mont. 1: 347--349, pl. 220. 1928 (Ld, N, W).

SYNGONANTHUS RETRORSUS Alv. Silv.

Additional bibliography: Mold., Phytologia 38: 32. 1977; Mold., Phytol. Mem. 2: 168 & 625. 1980.

Citations: MOUNTED ILLUSTRATIONS & CLIPPINGS: Alv. Silv., Fl. Mont. 1: 344--345, pl. 218. 1928 (Ld, N, W).

SYNGONANTHUS RHIZONEMA Ruhl.

Additional bibliography: Mold., Phytologia 38: 32--33 & 43. 1977; Mold., Phytol. Mem. 2: 168 & 625. 1980.

SYNGONANTHUS RIVULARIS Mold.

Additional bibliography: Mold., Phytologia 38: 33 & 48. 1977; Mold., Phytol. Mem. 2: 120 & 625. 1980.

Huber and Tillett encountered this plant on savannas, growing with their *no. 5573* at 100 m. altitude, in both flower and fruit in July.

Additional citations: VENEZUELA: Amazonas: *Huber & Tillett 5573a* (Ve). Bolívar: *Steyermark & Wurdack 792* (W--2168524--isotype, W--2407796--isotype).

SYNGONANTHUS ROBINSONII Mold.
Additional bibliography: Mold., Phytologia 38: 33--34. 1977; Mold., Biol. Abstr. 65: 3719. 1978; Mold., Phytol. Mem. 2: 228, 236, & 625. 1980.

SYNGONANTHUS RUFIPES Alv. Silv.
Additional bibliography: Mold., Phytologia 38: 34. 1977; Mold., Phytol. Mem. 2: 168 & 625. 1980.
Additional citations: MOUNTED ILLUSTRATIONS & CLIPPINGS: Alv. Silv., Fl. Mont. 1: 388, pl. 247. 1928 (Ld, N, W).

SYNGONANTHUS RUFO-ALBUS Alv. Silv.
Additional bibliography: Mold., Phytologia 38: 34--35. 1977; Mold., Phytol. Mem. 2: 168, 444, & 625. 1980.

SYNGONANTHUS RUPRECHTIANUS (Körn.) Ruhl.
Additional bibliography: Mold., Phytologia 38: 35 & 126. 1977; Mold., Biol. Abstr. 65: 3719. 1978; Mold., Phytol. Mem. 2: 168, 398, 427, & 625. 1980.

SYNGONANTHUS SAVANNARUM Mold. & *S. SAVANNARUM* var. *GLABRESCENS* Mold.
These taxa are now classified as *Paepalanthus savannarum* (Mold.) Mold. and *P. savannarum* var. *glabrescens* (Mold.) Mold., which see.

SYNGONANTHUS SCHLECHTERI Ruhl.
Additional bibliography: Mold., Phytologia 38: 33, 37, & 132. 1977; Mold., Phytol. Mem. 2: 221 & 625. 1980.

SYNGONANTHUS SCHWACKEI Ruhl.
Additional bibliography: Mold., Phytologia 38: 37--39. 1977; Mold., Phytol. Mem. 2: 168 & 625. 1980.

SYNGONANTHUS SCLEROPHYLLUS Ruhl.
Additional bibliography: Mold., Phytologia 38: 38. 1977; Mold., Phytol. Mem. 2: 168 & 625. 1980.

SYNGONANTHUS SICKII Mold.
Additional bibliography: Mold., Phytologia 38: 38. 1977; Mold., Phytol. Mem. 2: 168 & 625. 1980.

SYNGONANTHUS SIMILIS Ruhl.
Additional bibliography: Mold., Phytologia 38: 38--39. 1977; Mold., Phytol. Mem. 2: 120, 168, & 625. 1980.

SYNGONANTHUS SIMILIS var. *VENEZUELENSIS* Mold., Phytologia 45: 209. 1980.
Bibliography: Mold., Phytologia 45: 209. 1980; Mold., Phytol. Mem. 2: 120 & 625. 1980.
Huber describes this as an herb, 20--30 cm. tall, with the "ex-

ternal floral bracts" [involucral bracts] "marrón doradas", the flowers white. He encountered it on open savannas, where he reports it frequent, and on wet savannas with hummocks "por debajo de morichal", at 95--98 m. altitude, in flower in February and both in flower and fruit in May.

Citations: VENEZUELA: Amazonas: *O. Huber 1633* (Ld--type), *1905* (Ld), *3359* (Ve).

SYNGONANTHUS SIMPLEX (Miq.) Ruhl.

Additional bibliography: Knuth, Feddes Repert. Spec. Nov. Beih. 43: [Init. Fl. Venez.] 182. 1927; Mold., Phytologia 38: 39--42. 1977; Mold., Biol. Abstr. 65: 3719. 1978; Mold., Phytologia 42: 38 & 43. 1979; Mold., Phytol. Mem. 2: 112, 120, 123, 125, 168, & 625. 1980; Mold., Phytologia 54: 235. 1983.

Knuth (1927) cites *Passarge & Selwyn 580* from Bolívar and *Connell & Quelch 126* from Roraima, Venezuela.

Recent collectors have found the plant on wet and inundated savannas, "rather frequent", at 50 m. altitude, describing the inflorescence heads as white, in both flower and fruit in September and November.

Additional citations: COLOMBIA: Vaupés: *Schultes & Cabrera 12381* (W--2198862), *13505* (W--2198882), *14963* (W--2198876), *19936* (W--2198930). VENEZUELA: Amazonas: *Maguire & Politi 28035* (W--2046451); *Maguire, Wurdack, & Keith 41793* (W--2279322); *Thomas & Rogers 2615* (N). Bolívar: *Huber, Alarcon, & Davidse 6816* (Ld). Guárico: *Delascio, Montes, Mesa, & Arismandi 10228* (W--2937050). GUYANA: *Maguire & Fanshawe 23206a* (W--1907822).

SYNGONANTHUS SIMPLEX var. *APPENDICULIFER* Ruhl.

Additional bibliography: Mold., Phytologia 38: 42. 1977; Mold., Phytol. Mem. 2: 123, 168, & 625. 1980.

SYNGONANTHUS SINUOSUS Alv. Silv.

Additional bibliography: Mold., Phytologia 38: 42--43. 1977; Mold., Phytol. Mem. 2: 168 & 625. 1984.

Additional citations: MOUNTED ILLUSTRATIONS & CLIPPINGS: Alv. Silv., Fl. Serr. Min. 75. 1908 (W); Alv. Silv., Fl. Mont. 1: 353--355, pl. 224, fig. 2. 1928 (Ld, N, W).

SYNGONANTHUS SPADICEUS (Körn.) Ruhl.

Additional bibliography: Mold., Phytologia 38: 43. 1977; Mold., Biol. Abstr. 65: 3719. 1978; Mold., Phytol. Mem. 2: 168 & 625. 1980.

SYNGONANTHUS SQUARROSUS Ruhl.

Additional bibliography: Mold., Phytologia 38: 31 & 43--45 (1977) and 38: 183 & 192. 1978; Mold., Biol. Abstr. 65: 3719. 1978; Mold., Phytol. Mem. 2: 168 & 625. 1980.

SYNGONANTHUS SQUARROSUS var. *ELATIOR* Alv. Silv.

Additional bibliography: Mold., Phytologia 38: 44--45. 1977;

Mold., Phytol. Mem. 2: 168 & 625. 1980.
Citations: MOUNTED CLIPPINGS: Alv. Silv., Fl. Mont. 1: 396. 1928 (Ld, N, W).

SYNGONANTHUS STEYERMARKII Mold.
Additional bibliography: Mold., Phytologia 38: 45. 1977; Mold., Phytol. Mem. 2: 120 & 625. 1980.
Recent collectors describe this plant as growing in dense tufts and have encountered it at 3000--3200 m. altitude, in both flower and fruit in January.
Additional citations: VENEZUELA: Apure: *Steyermark, Dunsterville, & Dunsterville 101243* (N).

SYNGONANTHUS SURINAMENSIS Mold.
Additional bibliography: Mold., Phytologia 38: 45. 1977; Mold., Phytol. Mem. 2: 125 & 625. 1980.
Additional citations: SURINAM: *B. Maguire 24321* (W--1907837), *24502* (N--type, W--1907840--isotype).

SYNGONANTHUS TENUIPES Alv. Silv.
Additional bibliography: Mold., Phytologia 38: 45--46. 1977; Mold., Phytol. Mem. 2: 168 & 625. 1980.
Citations: MOUNTED ILLUSTRATIONS & CLIPPINGS: Alv. Silv., Fl. Mont. 1: 326--327, pl. 207. 1928 (Ld, N, W).

SYNGONANTHUS TENUIS (H.B.K.) Ruhl.
Additional bibliography: Knuth, Feddes Repert. Spec. Nov. Beih. 43: [Init. Fl. Venez.] 182. 1927; Hocking, Excerpt. Bot. A. 30. 421. 1978; Mold., Phytologia 42: 205. 1979; Mold., Phytol. Mem. 2: 112, 120, 123, 168, 442, 444, & 625. 1980;Mold., Phytologia 50: 246. 1982.
Recent collectors describe this plant as a common herb, 15--30 cm. tall, forming small colonies, often mixed with grasses and *Xyris*, with white inflorescence heads. They have encountered it in open areas of cerrado on white sand, in periodically burned cerrado and campina, on wet and sandy savannas over a quartzite base, in marshes on inundated campo, in "open treeless areas on white-sand savannas dominated by *Lagenocarpus* and *Axonopus* species interspersed with tree and shrub islands", and very abundant on "campo sujo, solo areia", at 20--255 m. altitude, in both flower and fruit in February, June, July, August, November, & December.
The vernacular name, "sempre viva", has been reported for this species -- actually, it is applied to all the Brazilian species with dry, *Xeranthemum*-like heads which are long-persistent after being picked. Steward and his associates report finding "a few heads proliferous" on their *no. 74*. Huber refers to the plant as "very common or even dominant all over the savannas".
Knuth (1927) cites an unnumbered Humboldt & Bonplant collection and *Passarge & Selwyn 259* from Bolívar, Venezuela. The *Prance, Pennington, & Murça Pires 1295* collection, cited below, is a mixture with a species of *Xyris* and a grass.

Material of *S. tenuis* has been misidentified and distributed in some herbaria as *S. gracilis* (Körn.) Ruhl. On the other hand, the *Bastos, Ubiratan, Bouças, & Carvalho 102*, distributed as *S. tenuis*, is *S. umbellatus* (Lam.) Ruhl., while *Prance, Nelson, Monteiro, & Lima 21039* is not eriocaulaceous.

Additional citations: COLOMBIA: Vaupés: *Maguire, Maguire, & Fernández 44114* (N); *Maguire, Wurdack, & Keith 41458* (W--2279266); *Schultes, Baker, & Cabrera 18533* (W--2198905); *Schultes & Cabrera 14231* (W--2198867), *19704* in part (N, W--2198923), *19918* (W--2198927), *Zarucchi 2135* (W--2962715). VENEZUELA: Amazonas: *O. Huber 2506* (Ld), *2643* (Ld); *Huber & Tillett 5573* (Ld); *Maguire, Wurdack, & Bunting 36336* (W--2168971), *36590* (W--2168978); *Thomas & Rogers 2608* (N). BRAZIL: Amazônas: *Rosa & Lira 2350* (N). Goiás: *Murça Pires & Santos 16209* (N). Mato Grosso: *Rosa & Santos 1962* (W--2901729). Pará: *Bastos, Ubiratan, Boucas, & Carvalho 103* (N); *Daly, Campbell, Silva, Silva, Bahia, & Santos D.930* (Ld, N); *Davidse, Rosa, Rosario, & Silva 17595* (Ld, N, W--2967828), *17683* (N), *17870* (Ld, N); *Martinelli 6855* [RB Herb. 203477] (Ld); *Prance, Pennington, & Murca Pires 1296* in part (W--2514742); *Rosa 3186* (N). Roraima: *Steward, Araujo, Buck, Ramos, & Ribamar 74* (N). MOUNTED CLIPPINGS: Kunth, Enum. Pl. 3: 534. 1841 (N, W).

SYNGONANTHUS TENUIS var. *MINOR* Mold.

Additional bibliography:Mold., Phytologia 38: 48 & 49. 1977; Hocking, Excerpt. Bot. A.30: 421. 1978; Mold., Phytologia 50: 246. 1982.

Recent collectors report this plant abundant on white-sand campina, the inflorescence heads white, and have found it both in flower and fruit in June.

Additional citations: VENEZUELA: Amazonas: *Huber & Tillett 2816* (Ld). BRAZIL: Amazônas: *Calderon, Monteiro, & Guedes 2552* (Ld, W--2931215), *2553* (Ld, W--2931216).

SYNGONANTHUS TIRICENSIS Mold.

Additional bibliography: Mold., Phytologia 38: 49. 1977; Mold., Phytol. Mem. 2: 120 & 626. 1980.

Huber and Steyermark refer to this plant as very frequent on sandy wet savannas near rivers and in rocky areas among vegetation associated with *Chimantaea mirabilis*, and in low scrub of *Mallophyton chimantensis*, at 2000--2500 m. altitude, describing the inflorescence heads dry and white or grayish-white, "with a hairy bud between the leaves" or with the "center of leafy clumps gray-white lanulose", the leaves themselves short, dull-green. and rosulate. They found it both in flower and fruit in January and February.

Additional citations: VENEZUELA: Bolívar: *Huber & Steyermark 6889* (Ld), *7004* (Ld), *7129* (Ld); *Steyermark, Espinosa, McDiarmid, & Brewer-Carías 115882* (Ld), *115927* (Ld); *Steyermark, Huber, & Carreño E. 128939* (Ld); *Steyermark & Wurdack 739* (W--2168531--isotype, W--2407794--isotype).

SYNGONANTHUS TRICHOPHYLLUS Mold.

Additional bibliography: Mold., Phytologia 38: 49--50. 1977; Mold., Phytol. Mem. 2: 112 & 626. 1980.

SYNGONANTHUS ULEI Ruhl.

Additional bibliography: Mold., Phytologia 38: 50 & 118. 1977; Mold., Biol. Abstr. 65: 3719 & 4341. 1978; Mold., Phytol. Mem. 2: 168 & 626. 1980.

SYNGONANTHUS ULEI var. *GOYAZENSIS* Mold.

Additional bibliography: Mold., Phytologia 38: 118. 1977; Anon., Biol. Abstr. 65 (8): C.22. 1978; Mold., Biol. Abstr. 65: 4341. 1978; Mold., Phytol. Mem. 2: 168 & 626. 1980.

Additional citations: BRAZIL: Goiás: *Irwin, Harley, & Smith 32664* in part (W--2752351--isotype).

SYNGONANTHUS UMBELLATUS (Lam.) Ruhl.

Additional bibliography: Knuth, Feddes Repert. Spec. Nov. Beih. 43: [Init. Fl. Venez.] 181. 1927; Anon., Biol. Abstr. 68: 4592. 1979; Hocking, Excerpt. Bot. A.33: 87. 1979; Mold., Phytologia 42: 31 & 205--206. 1979; Mold., Phytol. Mem. 2: 96, 112, 120, 123, 125, 126, 168, 172, 404, 428, 444, & 626. 1980; Mold., Phytologia 54: 145. 1983.

Recent collectors describe this plant as a "branched herb", 10--20 cm. tall, with white inflorescence heads and flowers, and have found it growing on wet and on white-sand savannas with areas of open bare ground, "frequent to abundant" on open campo sujo, on inundated campo, and in "open treeless areas on white-sand savannas dominated by *Lagenocarpus* and *Axonopus* species interspersed with tree and shrub islands", as well as "infrequent in full sun along small rivulets on savannas", at 90--460 m. altitude, in both flower and fruit in June, September, October, and December.

Knuth (1927) cites *Connell & Quelch 129* from Roraima, Venezuela.

Material of *S. umbellatus* has been misidentified and distributed in some herbaria as *S. tenuis* (Lam.) Ruhl. and as *Paepalanthus* sp. *Cowan & Soderstrom 1713* and *Maguire, Murça Pires, & Maguire 47130* are mixtures with f. *proliferens* Mold.

Additional citations: COLOMBIA: Vaupés: *Humbert & Schultes 27367* (N); *Schultes & Cabrera 19646* (W--2198919), *19918a* (W--2198928). VENEZUELA: Amazonas: *O. Huber 4645* (Ld); *J. A. Steyermark 57846* (W--1901745); *Thomas & Rogers 2592* (N). GUYANA: *Cowan & Soderstrom 1713* in part (W--2678027); *Goodland 912* (W--2548125); *Maas, Westra, & al. 4405* (Ld, N); *Maguire & Fanshawe 23252* (W--1907827); *Maguire, Tillett, & Tillett 43844* (N); *Mori, Persaud, & Boyan 8024* (W--2832715); *A. C. Smith 2166* (W--1777551). SURINAM: *Irwin, Prance, Soderstrom, & Holmgren 57536* (W--2514870); *B. Maguire 24380* (W--1907838); *Maguire & Stahel 23662* (W--1907849); *W. W. Thomas 2381* (Ld). FRENCH GUIANA: *Black & Klein 54-17351* (Cy); *Halle 455* (Cy, Cy); *Hoock s.n.* [22

Mai 1957] (Cy, Cy); *Raynal-Roques AR.19728* (Cy). BRAZIL: Amapá: *Maguire, Murça Pires, & Maguire 47130* in part (W--2435292); *Murça Pires & Cavalcante 52408* (W--2514665); *Ribeiro 1516* (N). Pará: *Bastos, Ubiranat, Bouças, & Carvalho 102* (N); *Black & Ledoux 50-10380* (W--2252969); *Davidse, Rosa, Rosário, & Silva 17589* (Ld, N, W--2967829); *Martinelli 6848* [RB Herb. 202992] (Ld). MOUNTED CLIPPINGS: Kunth, Enum. Pl. 3: 577. 1841 (N, W).

SYNGONANTHUS UMBELLATUS f. *BRACHYPHYLLUS* (Huber) Mold.

Additional bibliography: Mold., Phytologia 38: 123. 1977; Anon., Biol. Abstr. 65 (8): C.22. 1978; Mold., Biol. Abstr. 65: 4341. 1978; Mold., Phytol. Mem. 2: 168, 428, 444, & 626. 1980.

SYNGONANTHUS UMBELLATUS f. *LATIFOLIUS* Herzog

Additional bibliography: Mold., Phytologia 38: 121 & 123. 1977; Anon., Biol. Abstr. 65 (8): C.22. 1978; Mold., Biol. Abstr. 65: 4341. 1978; Mold., Phytol. Mem. 2: 123, 168, & 626. 1980.

SYNGONANTHUS UMBELLATUS var. *LIEBMANNIANUS* (Körn.) Ruhl.

Additional bibliography: Mold., Phytologia 38: 123--124. 1977; Anon., Biol. Abstr. 65 (8): C.22. 1978; Mold., Biol. Abstr. 65: 4341. 1978; Mold., Phytol. Mem. 2: 168 & 626. 1980.

SYNGONANTHUS UMBELLATUS f. *MINOR* (Miq.) Mold.

Additional bibliography: Mold., Phytologia 38: 124--125. 1977; Anon., Biol. Abstr. 65 (8): C.22. 1978; Mold., Biol. Abstr. 65: 4341. 1978; Mold., Phytol. Mem. 2: 125, 428, & 626. 1980.

SYNGONANTHUS UMBELLATUS var. *PRANCEI* Mold.

Additional bibliography: Mold., Phytologia 38: 121 & 125. 1977; Anon., Biol. Abstr. 65 (8): C.22. 1978; Mold., Biol. Abstr. 65: 4341. 1978; Mold., Phytol. Mem. 2: 168 & 626. 1980.

SYNGONANTHUS UMBELLATUS f. *PROLIFERENS* Mold.

Synonymy: *Syngonanthus umbellatus* f. *proliferus* Mold. ex Hocking, Excerpt. Bot. A.33: 87. 1979. *Syngonanthus umbellatus* f. *proliferans* Mold., Phytologia 42: 205 sphalm. 1979.

Additional bibliography: Anon., Biol. Abstr. 68: 4592. 1979; Hocking, Excerpt. Bot. A.33: 87. 1979; Mold., Phytologia 42: 205. 1979; Mold., Phytol. Mem. 2: 120, 123, 168, 444, & 626. 1980.

The *Cowan & Soderstrom 1713*, cited below, and *Maguire, Murça Pires, & Maguire 47130* are mixtures with typical *S. umbellatus* (Lam.) Ruhl.

Additional citations: GUYANA: *Cowan & Soderstrom 1713* in part (W--2678027).

SYNGONANTHUS UMBELLATUS f. *STELLARIS* Mold.

Additional bibliography: Anon, Biol. Abstr. 68: 4592. 1979; Hocking, Excerpt. Bot. A.33: 87. 1979; Mold., Phytologia 42: 205. 1979; Mold., Phytol. Mem. 2: 112 & 626. 1980.

SYNGONANTHUS VARESCHII Mold.

Additional bibliography: Mold., Phytologia 38: 125. 1977; Anon., Biol. Abstr. 65 (8): C.22. 1978; Mold., Biol. Abstr. 65: 4341. 1978; Mold., Phytol. Mem. 2: 120 & 626. 1980.

Additional citations: MOUNTED CLIPPINGS: Mold., Act. Biol. Venez. 2 (7): 50. 1957 (W).

SYNGONANTHUS VENEZUELENSIS Mold.

Additional bibliography: Mold., Phytologia 38: 125--126. 1977; Anon., Biol. Abstr. 65 (8): C.22. 1978; Mold., Biol. Abstr. 65: 4341. 1978; Mold., Phytol. Mem. 2: 120 & 626. 1980.

Additional citations: VENEZUELA: Bolívar: *J. A. Steyermark 59347* (W--1901814--isotype).

SYNGONANTHUS VENUSTUS Alv. Silv.

Additional bibliography: Mold., Phytologia 38: 126. 1977; Anon., Biol. Abstr. 65 (8): C.22. 1978; Mold., Biol. Abstr. 65: 4341. 1978; Mold., Phytol. Mem. 2: 168 & 626. 1980.

Additional citations: MOUNTED ILLUSTRATIONS & CLIPPINGS: Alv. Silv., Fl. Mont. 1: 366--368, pl. 232. 1928 (Ld, N, W).

SYNGONANTHUS VERTICILLATUS (Bong.) Ruhl.

Additional bibliography: Mold., Phytologia 42: 206. 1979; Monteiro, Giulietti, Mazzoni, & Castro, Bol. Bot. Univ. S. Paulo 7: [43], 46, 47, 53, & 58, fig. 75--78. 1979; Mold., Phytol. Mem. 2: 120, 168, 428, & 626. 1980.

Additional illustrations: Monteiro, Giulietti, Mazzoni, & Castro, Bol. Bot. Univ. S. Paulo 7: 58, fig. 75--78. 1979.

Hatschbach found this plant growing in wet sandy soil of campo rupestre, at 1050 m. altitude, both in flower and fruit in March.

Additional citations: BRAZIL: Minas Gerais: *Anderson, Stieber, & Kirkbride 35459* (W--2709606); *Hatschbach 41321* (N, W--2840065), *42863* (Ld, W--2937363); *Irwin, Maxwell, & Wasshausen 20797* (W--2598435); *Irwin, Santos, Souza, & Fonsêca 22664* (W--2582556A). MOUNTED CLIPPINGS: Kunth, Enum. Pl. 3: 577. 1841 (N, W).

SYNGONANTHUS WAHLBERGII (Wikstr.) Ruhl.

Additional bibliography: Mold., Phytologia 38: 129--133. 1977; Anon., Biol. Abstr. 65 (8): C.22. 1978; Mold., Biol. Abstr. 65: 4341. 1978; Mold., Phytol. Mem. 2: 205, 213, 217, 221, 223, 228, 234, 236, 238, 246, 428, 444, & 626. 1980.

SYNGONANTHUS WEDDELLII Mold.

Additional bibliography: Mold., Phytologia 38: 133. 1977; Anon., Biol. Abstr. 65 (8): C.22. 1978; Mold., Biol. Abstr. 65: 4341. 1978; Mold., Phytol. Mem. 2: 168 & 626. 1980; Mold. in Harley & Mayo, Toward Checklist Fl. Bahia 77. 1980.

SYNGONANTHUS WEDDELLII var. *GRACILIS* Mold.

Additional bibliography: Mold., Phytologia 38: 133. 1977; Anon.,

Biol. Abstr. 65 (8): C.22. 1978; Mold., Biol. Abstr. 65: 4341. 1978; Mold., Phytol. Mem. 2: 168 & 626. 1980; Mold. in Harley & Mayo, Toward Checklist Fl. Bahia 77. 1980.

Recent collectors describe this plant as having gray-green leaves and pale-brown involucral bractlets. They have encountered in a region of "sandstone, metamorphic and quartzite rock outcrops with associated marsh, damp flushes and grassland and some cutover mixed deciduous woodland by streams and cerrado", at 1500--1600 m. altitude.

Additional citations: BRAZIL: Bahia: *Harley, Mayo, Storr, Santos, & Pinheiro in Harley 19623* (N).

SYNGONANTHUS WELWITSCHII (Rendle) Ruhl.

Additional bibliography: Mold., Phytologia 38: 133--134. 1977; Anon., Biol. Abstr. 65 (8): C.22. 1978; Mold., Biol. Abstr. 65: 4341. 1978; Mold., Phytol. Mem. 2: 209 234, & 626. 1980.

SYNGONANTHUS WIDGRENIANUS (Körn.) Ruhl.

Additional bibliography: Mold., Phytologia 38: 178--180. 1978; Anon., Biol. Abstr. 65 (8): C.22. 1978; Mold., Biol. Abstr. 65: 4341. 1978; Mold., Phytol. Mem. 2: 168, 444, & 626. 1980.

Additional citations: BRAZIL: Minas Gerais: *Widgren 822* (W--936263--cotype).

SYNGONANTHUS WIDGRENIANUS var. *PUBERULIFOLIUS* Ruhl.

Additional bibliography: Mold., Phytologia 38: 179--180. 1978; Mold., Phytol. Mem. 2: 168, 444, & 626. 1980.

SYNGONANTHUS WILSONII Mold.

Additional bibliography: Mold., Phytologia 38: 180. 1978; Mold., Phytol. Mem. 2: 91, 92, & 626. 1980.

SYNGONANTHUS XANTHOLEPIS Alv. Silv.

Additional bibliography: Mold., Phytologia 38: 180. 1978; Mold., Phytol. Mem. 2: 168 & 626. 1980.

Citations: MOUNTED CLIPPINGS: Alv. Silv., Fl. Mont. 1: 395. 1928 (N, W).

SYNGONANTHUS XERANTHEMOIDES (Bong.) Ruhl.

Additional bibliography: Knuth, Feddes Repert. Spec. Nov. Beih. 43: [Init. Fl. Venez.] 182. 1927; Mold., Phytologia 42: 206--207. 1979; Mold., Phytol. Mem. 2: 110, 120, 123, 168, 404, 425, 428, 443, 444, 626, & 628. 1980; Mold. in Harley & Mayo, Toward Checklist Fl. Bahia 77. 1980; Mold., Phytologia 50: 246 & 264 (1982), 51: 302 (1982), 53: 311 (1983), 54: 145, 234, 235, & 237 (1983), and 55: 89 & 158. 1984.

Recent collectors have encountered this plant "in wet areas in savanna leading to cano", on "wet marshy savannas leading to morichal", "in open morichal with scattered *Mauritia* palms but otherwise marshy grassland, locally with standing shallow pools of water dominated by *Eleocharis elegans*", "along marshy edges of

lower parts of quebradas among rocks, with a narrow gallery forest with *Mauritia*", and in "catinga úmida cortada por diversos igarapés", at 60--80 m. altitude, the flowering heads described as white. They have found it both in flower and fruit in February.

Knuth (1927) cites *Passarge & Selwyn 220* from Bolívar and *Pittier 5841* from Miranda, Venezuela.

Material of *S. xeranthemoides* has been misidentified and distributed in some herbaria as *S. caulescens* (Poir.) Ruhl. and as *Paepalanthus* sp. On the other hand, the *Aristeguieta & Tamayo 4490,* distributed as typical *S. xeranthemoides,* actually represents f. *brevifolius* Mold., while *Steyermark, Berry, Dunsterville, & Dunsterville 117344* is var. *tricostatus* (Gleason) Mold. and *Murça Fires & Santos 16612* is *Eriocaulon humboldtii* Kunth.

Additional citations: COLOMBIA: Meta: *Haught 2740* (W--1707280). Vaupés: *Schultes & Cabrera 20056* (W--2198935). VENEZUELA: Amazonas: *H. L. Clark 6566* (N); *O. Huber 4240* (Ld). Apure: *Davidse & Gonzalez 13910* (Ld), *14156* (Ld), *15528* (Ld), *15734* (Ld). Táchira: *Steyermark & Liesner 119298* (Ld). BRAZIL: Amazônas: *Calderón, Monteiro, & Guedes 2699* (Ld, W--2931230); *A. Janssen 460* (Ld). Goiás: *Hatschbach 34244* (W--2839299); *Irwin, Souza, & Reis dos Santos 10510* (N, W--2934275). Mato Grosso: *Prance, Lleras, & Coêlho 18991* (N). Minas Gerais: *Irwin, Maxwell, & Wasshausen 21004* (W--2598446). Pará: *Prance, Silva, Berg, Henderson, Nelson, Balick, Bahia, & Santos P.25314* (W--2868546); *Rosa & Santos 1882* (N, N). Rio de Janeiro: *Segadas Vianna, Lau, Ormond, Machline, & Lorêdo I.380* in part (Sm). Rondônia: *Maguire, Murça Pires, Maguire, & Silva 56445* in part (N), *56460* (W--2514897). São Paulo: *Black 51-11027* (W--2252975).

SYNGONANTHUS XERANTHEMOIDES var. *ALPINUS* Mold., Phytologia 54: 235 non. nud. 1983; var. nov.

Bibliography: Mold., Phytologia 54: 235. 1983.

Haec varietas a forma typica speciei statura humiliore foliis 2.5--4 cm. longis pedunculis 6--10 cm. longis recedit.

This variety differs from the typical form of the species in its much smaller stature, the leaves only 2.5--4 cm. long during anthesis and the peduncles only 6--10 cm. long.

The variety is based on *Steyermark, Huber, & Carreño E.128588* from "Pequeñas altiplanicies en la base septentrional de los farallones superiores del Amuri-tepui (Sector W del Acopán-tepui) Macizo del Chimantá, Estado Bolivar, Pos. geográfica aprox.: 5° 10' N, 62° 07' W.", Venezuela, at an altitude of about 1850 m., collected between February 2 and 5, 1983, and deposited in the Lundell Herbarium at the University of Texas. The collectors note that the plant forms dense tufts at the base of canyons. On other collections they describe the plant as a low herb common in wet sandy or swampy savannas, rather frequently forming small clumps among the grass and also forming dull-green clumps by sandstone rock outcrops at 2170--2200 m. altitude, resembling *Chimantaea huberi* in habit of growth, often growing in *C. mirabilis* vegeta-

tion, the leaves erect, stiff, olive-green, the involucral bracts "marrón claro doradas", and the inflorescence heads dry, whitish or gray.

Citations: VENEZUELA: Bolivar: *Huber & Steyermark 6911* (Ld), *6973* (Ld); *Steyermark, Huber, & Carreño E. 128236* (Ld), *128438* (Ld), *128588* (Ld--type), *128790* (Ld).

SYNGONANTHUS XERANTHEMOIDES var. *ANGUSTIFOLIUS* Mold., Phytologia 51: 302. 1982.

Bibliography: Mold., Phytologia 51: 302. 1982.

Huber and Medina describe this plant as an "hierba frecuente en el borde y sobre los monticulos en el arbustal, cabezuelas blancas", at 120 m. altitude, and found it in both flower and fruit in February.

Citations: VENEZUELA: Amazonas: *O. Huber 5112* (Ld--type); *Huber & Medina 5974* (Ld).

SYNGONANTHUS XERANTHEMOIDES f. *BREVIFOLIUS* Mold.

Additional bibliography: Mold., Phytologia 42: 206--207. 1979; Mold., Phytol. Mem. 2: 120, 168, & 626. 1980; Mold., Phytologia 50: 246 (1982) and 54: 237. 1983.

Recent collectors have encountered this plant on "treeless wet savannas dominated by *Axonopus, Paspalum, Panicum* and in spots *Rapateaceae*", on savannas with morichales, "locally frequent in boggy areas in scrub and adjacent *Stegolepis* bogs" , at the edges of waterholes on wet open sedge savannas, and on white-sand campinas, at 910--2140 m. altitude, describing the plants as to 30 cm. tall, the coarse, grass-like leaves light-green, the inflorescence heads ["spikelets"] and flowers white. They have found it in flower in June and in both flower and fruit in March, October, and December. Huber & Alarcon found it in "arbustales abiertos sobre roca arenisca".

The *Calderón & al. 2699* and *Segadas Vianna & al. I.380* collections, cited below, are mixtures with typical *S. xeranthemoides* (Bong.) Ruhl., while the *Irwin & al. 21358*, distributed and previously cited as f. *brevifolius*, actually represents var. *confusus* (Körn.) Mold.

Additional & corrected citations: VENEZUELA: Amazonas: *O. Huber 4274* (Ld), *5202* (Ld). Bolívar: *Davidse, Ramia, & Montes 4830* (E--2773081); *Huber & Alarcon 7392* (Vo); *Steyermark, Carreño Espinosa, McDuarmid, & Brewer-Carías 116117* (E--2881851); *Steyermark & Liesner 127526* (Ld); *Steyermark & Nilsson 677* (W--2400110). Guárico: *Aristeguieta & Tamayo 4490* (N). GUYANA: *Maas, Mennega, Welle, & Groen 5700* (Ld); *Tillett & Tillett 45671* (N). BRAZIL: Amazônas: *Calderon, Monteiro, & Guedes 2555* (Ld, W--2931218), *2699* in part (W--2970399). Mato Grosso: *Maguire, Murça Pires, Maguire, & Silva 56446* in part (W--2614893). Minas Gerais: *Irwin, Maxwell, & Wasshausen 20078* (W--2569051A). Rio de Janeiro: *Segadas Vianna, Lau, Ormond, Machline, & Larêdo I.380* in part (W--2370793). São Paulo: *Eiten & Eiten 2349* (W--2745130); *Mattos & Mattos 8563* (W--2523012).

SYNGONANTHUS XERANTHEMOIDES var. *CONFUSUS* (Körn.) Mold.

Additional bibliography: Mold., Phytologia 38: 185--186 & 192. 1978; Mold., Phytol. Mem. 2: 168, 425, 428, 444, & 626. 1980; Mold. in Harley & Mayo, Toward Checklist Fl. Bahia 77. 1980; Mold., Phytologia 54: 237. 1983.

Recent collectors describe this plant as forming hard tussocks, the leaves erect and rigid, the peduncles 30--40 cm. long, the "heads light brown", the "floral bractlets" stramineous, and the florets white. They have found the plant growing in campo rupestre, in "cerrado seep in an area of gallery forest and adjacent cerrado", and in marshes in a region of open scrub on white sand with damp areas and extensive sedge meadows (brejo) partly burned over, at 550--1000 m. altitude, in both flower and fruit in February, March, and July.

Material of this variety has previously mistakenly been regarded as typical *S. xeranthemoides* (Bong.) Ruhl. or its f. *brevifolius* Mold.

Additional citations: BRAZIL: Bahia: *Harley, Mayo, Storr, Santos, & Pinheiro in Harley 18832* (W--2936298), *18838* (Ac, Ld, N); *Harley, Renvoize, Erskine, Brighton, & Pinheiro in Harley 15933* (W--2791601); *Mori, King, Santos, & Hage 12643* (Ld, W--2854283). Goiás: *Irwin, Maxwell, & Wasshausen 21358* (Ld, N, W--2598443).

SYNGONANTHUS XERANTHEMOIDES var. *GRAHAMAE* Mold.

Additional bibliography: Mold., Phytologia 42: 207. 1979; Mold., Phytol. Mem. 2: 120, 123, & 626. 1980; Mold., Phytologia 55: 158. 1984.

Recent collectors describe this plant as having the leaves and peduncles ("scapes") medium-green, the involucral bractlets brown or grayish-brown, and the flowers white. They report it often locally common on savannas and have also encountered it at the base of shaded canyons, in sandstone talus, on sand bars, in gravel on banks and near streams, along rocky streamsides in the mist of waterfalls, and often so abundant as to form a dense turf on wet sand. They have found it at altitudes of 100--1850 m. altitude, in flower in March and in both flower and fruit in February and from September to November.

Additional citations: VENEZUELA: Amazonas: *O. Huber 1677* (Ld), *3364* (Lc); *W. W. Thomas 2646* (Ld). Bolívar: *Huber & Entralgo 7399* (Ld); *Steyermark, Huber, & Carreño E. 128586* (Ld). GUYANA: *Tillett & Tillett 45486* (N), *45844* (N).

SYNGONANTHUS XERANTHEMOIDES var. *HIRSUTUS* Mold.

Additional bibliography: Mold., Phytologia 42: 207. 1979; Mold., Phytol. Mem. 2: 168 & 626. 1980.

Additional citations: BRAZIL: Mato Grosso: *Prance, Lleras, & Coêlho 18981* (W--2772580).

SYNGONANTHUS XERANTHEMOIDES var. *MELANOLEPIS* (Alv. Silv.) Mold.

Additional bibliography: Mold., Phytologia 38: 187. 1978; Mold., Phytol. Mem. 2: 168, 444, & 626. 1980.

Citations: MOUNTED CLIPPINGS: Alv. Silv., Fl. Mont. 1: 396. 1928 (N, W).

SYNGONANTHUS XERANTHEMOIDES var. *MINOR* (Kunth) Mold.

Additional bibliography: Mold., Phytologia 38: 188. 1978; Mold., Phytol. Mem. 2: 168, 428, 444, & 626. 1980.

SYNGONANTHUS XERANTHEMOIDES var. *STRIGILLOSUS* Mold.

Additional bibliography: Mold., Phytologia 38: 188. 1978; Mold., Phytol. Mem. 2: 168 & 626. 1980; Mold. in Harley & Mayo, Toward Checklist Fl. Bahia 77. 1980.

Recent collectors describe this plant as a rosette herb with rigid olive-green leaves to about 6 cm. long, glossy above with white margins, pale-green beneath, the peduncles ["scapes"] to 30 cm. tall, grayish, and the involucral bractlets stramineous. They have found it growing in open scrub on white sand with damp areas and extensive sedge meadows (brejo) partly burned over, at 950 m. altitude, in both flower and fruit in February.

Additional citations: BRAZIL: Bahia: *Harley, Mayo, Storr, Santos, & Pinheiro in Harley 18831* (K).

SYNGONANTHUS XERANTHEMOIDES var. *TRICOSTATUS* (Gleason) Mold.

Additional bibliography: Mold., Phytologia 42: 206 & 207. 1979; Mold., Phytol. Mem. 2: 120, 123, 168, 444, & 626. 1980.

Recent collectors refer to this plant as a common herb, 30--50 cm. tall, the leaves erect, borne in several planes, coriaceous, dull- or rich-green, the inflorescence heads dry, grayish-white or white, the involucral bractlets buff-brown, and the flowers dull-white. They describe it as growing in dense clumps or tufts and have encountered it around swamps, frequent on open or white-sand savannas, among rocks in sandy areas near rapids, locally common under taller plants in moist areas of savannas, on wet savannas with a thin soil layer over white sand, and on rocky wet savannas dominated by *Stegolepis* and *Cottendorfia*, with *Nietneria*, *Tofieldia*, *Xyris*, *Abolboda*, and *Lagenocarpus* also present, at 100--2140 m. altitude, in flower in March, in fruit in February, May, and August, and in both flower and fruit in June, October, and November. Huber & Tillett describe it as an "hierba arrosetada muy frecuente en todas la sabana anegadiza".

The *Steyermark 75854* collection, cited below, was distributed as and previously mistakenly cited as *S. reflexus* Gleason.

Additional citations: VENEZUELA: Amazonas: *O. Huber 1076* (Ld), *3102* (Ld); *Huber & Tillett 2859* (Ld), *5286* (Ve); *Wurdack & Adderley 43691* (W--2320947). Bolívar: *Huber, Alarcon, & Barreat 6729* (Ld); *Huber, Rodriguez, & Alarcon 7254* (Vo), *7329* (Ld); *Moore, Ambrose, Dietz, & Pfister 9647* (Ba); *J. A. Steyermark 75854* (Ld, W--2407773), *93485* (W--2584113); *Steyermark, Berry, Dunsterville, & Dunsterville 117344* (Ld); *Steyermark, Espinosa, McDiarmid, & Brewer-Carías 116117* (Ld); *Steyermark & Nilsson 573* (W--2400109), *668* (W--2400112); *W. W. Thomas 2508* (N), *2707* (N). GUYANA: *Maas & Westra 4412* (Ld, N); *Maguire, Tillett, & Tillett 43833*

(Ld, N). BRAZIL: Minas Gerais: *Maguire, Mendes Magalhães, & Maguire 49090* (W--2435308).

SYNGONANTHUS XERANTHEMOIDES var. *VERNONIOIDES* (Kunth) Mold.

Additional bibliography: Mold., Phytologia 38: 183, 185--188, & 190--192. 1978; Monteiro, Giulietti, Mazzoni, & Castro, Bol. Bot. Univ. S. Paulo 7: [43], 46--48, 53, & 58, fig. 70. 1979; Mold., Phytol. Mem. 2: 168, 404, 428, 444, 626, & 628. 1980; Mold., Phytologia 50: 264. 1982.

Illustrations: Monteiro, Giulietti, Mazzoni, & Castro, Bot. Bol. Univ. S. Paulo 7: 58, fig. 70. 1979.

SYNGONANTHUS XINGUENSIS Mold.

Additional bibliography: Mold., Phytologia 38: 192. 1978; Mold., Phytol. Mem. 2: 168 & 626. 1980.

SYNGONANTHUS YACUAMBENSIS Mold.

Additional bibliography: Mold., Phytologia 42: 208. 1979; Mold., Phytol. Mem. 2: 129 & 626. 1980; Hocking, Excerpt. Bot. A. 36: 23. 1981; Mold., Phytologia 53: 264. 1983.

Material of this species has been mistakenly distributed in some herbaria as *Eriocaulon* sp.

Additional citations: ECUADOR: Azuay: *Holm-Nielsen, Jeppesen, Løjtnant, & Øllgaard 4814* (Ac, E--2773087, Eu--55331, Ut--352572B), *5080* (Ac, E--2773091); *Prieto P.197* (W--2056919--isotype). Loja: *Balslev 1409* (Ld, N).

SYNGONANTHUS YAPACANENSIS Mold.

Additional bibliography: Mold., Phytologia 38: 193. 1978; Mold., Phytol. Mem. 2: 120 & 626. 1980.

Recent collectors describe this plant as growing 15--20 cm. tall, the inflorescence heads dry and gray, grayish-white, or white. They have found it growing on white-sand savannas and in open grassland, "formando pequeños cojines en la sabana", at 95--125 m. altitude, referring to it as "frequent", "rather frequent", or "dominant on open savannas", in flower in April and both in flower and fruit in February, March, May, and August.

Additional citations: VENEZUELA: Amazonas: *Davidse, Huber, & Tillett 16948* (Ld), *17037* (Ld); *O. Huber 2464* (Ld), *3227* (Lc), *3407* (Lc), *3852* (Lc), *5088* (Ld), *6078* (Ld); *Huber & Medina 5760* (Ld), *5806* (Ld); *Huber & Tillett 3061* (Ld); *Huber, Tillett, & Davidse 3713* (Ld); *Maguire, Cowan, & Wurdack 30782* (W--2046514--isotype); *Maguire, Wurdack, & Bunting 37615* (W--2169000), *37672* (W--2169003).

SYNGONANTHUS YAPACANENSIS var. *HIRSUTUS* Mold.

Additional bibliography: Mold., Phytologia 38: 193. 1978; Mold., Phytol. Mem. 2: 120 & 626. 1980.

Huber refers to this plant as an herb forming "pequeños cojines", rather frequent on open savannas, at 100--120 m. altitude, the peduncles ("scapes") bluish-green and the inflorescence heads gray or white, and found it both in flower and fruit

in March and August.

Additional citations: VENEZUELA: Amazonas: *O. Huber 2411* (Ld), *5145* (Ld); *Huber & Tillett 2914* (Ld), *3071* (Ld).

TONINA Aubl.

Additional & emended bibliography: J. F. Gmel. in L., Syst. Nat., ed. 13, imp. 1, 2: 206. 1791; Reichenb., Conspect. Reg. Veg. 1: 58. 1828; Durand, Ind. Gen. Phan. 454. 1888; Post & Kuntze, Lexicon 293, 563, & 623. 1904; Domin, Ann. Jard. Bot. 24 [ser. 2, 9]: 248. 1911; Lotsy, Vortr. Bot. Stammesges. 3 (1): 705--707, fig. 479. 1911; J. C. Willis, Dict. Flow. Pl., ed. 5, 654. 1925; Knuth, Feddes Repert. Spec. Nov. Beih. 43: [Init. Fl. Venez.] 183. 1927; Stapf, Ind. Lond. 3: 90 (1930) and 6: 316. 1931; J. C. Willis, Dict. Flow. Pl., ed. 6, 654. 1951; Rouleau, Guide Ind. Kew. 96, 189, & 270. 1970; Hocking, Excerpt. Bot. A.23: 389. 1974; Thanikaimoni, Inst. Franç. Pond. Trav. Sect. Scient. Tech. 13: 236 & 285. 1976; Latorre, Ortega, & Inca, Cienc. Naturaleza 18:62. 1977; Bodley, Lab. Anthrop. Wash. St. Univ. Rep. Invest. 55: 23. 1978; Giulietti, Bol. Bot. Univ. S. Paulo 6: 63. 1978; Mold., Phytologia 42: 208. 1979; Monteiro, Giulietti, Mazzoni, & Castro, Bol. Bot. Univ. S. Paulo 7: [43], 46, 47, 54, & 59, fig. 102 & 103. 1979; Mold., Phytol. Mem. 2: 67, 75, 76, 79, 82, 84, 91, 104, 112, 120, 123, 125, 126, 129, 135, 169, 445, & 626. 1980; Mold., Phytologia 45: 40 & 511. 1980; Mold. in Harley & Mayo, Toward Checklist Fl. Bahia 77. 1980; F. C. Seymour, Phytol. Mem. 1: 85 & 313. 1980; Hocking, Excerpt. Bot. A.36: 23. 1981; Mold., Phytologia 50: 242 & 511 (1982) and 54: 234 & 237. 1983; Badillo, Schnee, & Rojas, Ernstia 14: [Clave Fam. Pl. Sup. Venez., ed. 6] 213. 1983; Mold., Phytologia 52: 511 (1983), 54: 511 (1984), and 55: 88 & 166. 1984.

The *Oldeman B.2674,* distributed as *Tonina* sp., seems to be a sterile specimen of *Syngonanthus macrocaulon* Ruhl., while *Prance & Ramos 23562* is not eriocaulaceous.

TONINA FLUVIATILIS Aubl.

Additional synonymy: *Tonina flaviatilis* Aubl. ex Mold., Phytol. Mem. 2: 445 in syn. 1980. *Tonina aquatilis* Aubl. ex Mold., Phytologia 52: 129 in syn. 1982.

Additional bibliography: Domin, Ann. Jard. Bot. Buitenz. 24 [ser. 2, 9]: 248. 1911; Lotsy, Vortr. Bot. Stammesges. 3 (1): 705--707, fig. 479. 1911; Knuth, Feddes Repert. Spec. Nov. 43: [Init. Fl. Venez.] 183. 1927; Savage, Cat. Linn. Herb. Lond. 21. 1945; Latorre, Ortega, & Inca, Cienc. Naturaleza 18: 62. 1977; Mold., Phytologia 42: 208. 1979; Monteiro, Giulietti, Mazzoni, & Castro, Bol. Bot. Univ. S. Paulo 7: [43], 46, 54, & 59, fig. 102 & 103. 1979; Mold. in Harley & Mayo, Toward Checklist Fl. Bahia 77. 1980; F. C. Seymour, Phytol. Mem. 1: 85. 1980; Hocking, Excerpt. Bot. A.36: 23. 1981; Mold., Phytologia 50: 242 (1982), 54: 234 & 237 (1983), and 55: 88 & 166. 1984.

Additional illustrations: Lotsy, Vortr. Bot. Stammesges. 3 (1): 705, fig. 479. 1911; Monteiro, Giulietti, Mazzoni, & Castro, Bol. Bot. Univ. S. Paulo 7: 59, fig. 102 & 103. 1979.

Recent collectors describe this plant as an herb with a dense fibrous mat of roots, 30--40 cm. tall, the stems hairy, reclining at the base when submerged, erect above water, the young inflorescecnces green or whitish, the older ones brown or "marrom", brown when in fruit. They describe it as forming dense swards or dense mats in shallow water, the stems branched at the base, the leaves grass-green, the inflorescence heads with pale-brown bractlets, and the fruit greenish-brown. They have found it growing in pastures and wet swales, in wet cultivated soil, in open areas near streams, on llanos with pines and grasses, "rooted in white sand in running tea-brown water at roadsides in primary lowland rainforest with heavy leaf litter", in "damp marshy areas in open secondary growth", in capoeira, at the margins of creeks, in wet soaked soil of waste places on riverbanks, in boggy areas along trails and in sand along rivers, in open bogs, in fields with low swampy depressions on level areas of valleys, locally common at the edges of ponds, or even completely "terrestrial".

Almeda and his associates refer to this plant as a "slender colonial herb mostly less than 1 foot tall, the perianth brown and scarious, locally abundant in secondary vegetation along fencerows and in moist depressions". Other collectors have found it in and around morichal dominated by *Mauritia flexuosa* and "common" in old pastures. Steyermark & Liesner describe it as "forming bunches of sprawling stems along dried stream margins"; Cowan reports it common in association with *Stemodia, Cyperus,* and *Aciotis*; Folsom refers to it as "terrestrial in ditches and clearings". It has been encountered from sealevel to 1000 m. altitude, in both flower and fruit from March to August, in flower also in November and in fruit also in January and October. A photograph was made of the habitat locality of *Davidson 3644*. Clark collected the species in an area of 3400--3600 mm. average annual rainfall.

Material of *T. fluviatilis* has been misidentified and distributed in some herbaria as f. *parvifolia* Mold., *Anacharis* sp. and *Mayacaceae* sp. and in at least one herbarium (perhaps through an accidental transposition of labels) as *Hyptis longifolia* Epling. On the other hand, the *Lobo, Vilhena, & Ribeiro 115,* distributed as *Tonina fluviatilis,* is not eriocaulaceous.

Additional citations: MEXICO: Tabasco: *C. Cowan 3336* (N); *Solano & Cowan 2518* (N). HONDURAS: Gracias a Dios: *C. Nelson 824* (E--2773099); *Nelson & Romero 4123* (N). COSTA RICA: Puntarenas: *Almeda, Wilbur, & Daniel 3339* (N); *Wilbur, Almeda, & Daniel 23621* (Mi). San José: *Weston, Weston, & Weston 4297* (Lc). PANAMA: Coclé: *D'Arcy 11340* (Ld); *Hammel 3417* (E--2773074). Colon: *Correa, Mendieta, & Mayo 2041* (E--2773098). Veraguas: *Folsom 3000* (Ld); *Witherspoon & Dressler 8899* (W--2846693). TRINIDAD AND TOBAGO: Trinidad: *Adams & Thomas 14565* (Mi); *Barnard 3* (E--2773100); *Ramcharan & Khan 513* (N). COLOMBIA: Amazonas: *Schultes & Cabrera 15611* (W--2144050). Amazonas/Vaupés: *Schultes & Cabrera 14030* (W--2171309), *14053* (W--2171321), *14556* (W--2198873), *14604* (W--2198874), *14618* (W--

2198875). Antioquia: *Alverson, White, & Shepherd 178* (N); *J. Denslow 2521* (Ws); *Schultes & Cabrera 18648* (W--2198907). Magdalena: *Haught 2287* (W--1706951). Meta: *Haught 2579* (W--1707159). Putumayo: *Schultes & Cabrera 19063* (W--2198913). Valle: *Bristol 665* (W--2899593). Vaupés: *Schultes & Cabrera 17162* (W--2198884), *19429* (W--2198918). VENEZUELA: Amazonas: *H. L. Clark 6566* (Ld, N). Bolívar: *J. A. Steyermark 88759* in part (W--2435335); *Steyermark & Liesner 127665* (Ld). Guárico: *Davidse 3800* (Ld). Táchira: *Liesner & González 10418* (Ld); *Steyermark & Liesner 119298* (N). Zulia: *DeBruijn 1475* (W--2837700). GUYANA: *Maas, Westra, & al. 3605* (Ld), *3808* (Ld, N). SURINAM: *W. W. Thomas 2364* (N). FRENCH GUIANA: *Cremers 5372* (Cy, Ld); *Granville 3186* (Ld); *Raynal-Roques 19741* (Cy), *19824* (Cy). PERU: Loreto: *Davidson 3644* (N); *Gentry, Díaz, Aronson, & Jaramillo 27685* (N); *McDaniel, Rimachi, & Folsom 20534* (N). BRAZIL: Amazônas: *Baldwin 3555* (Mi); *Calderón, Monteiro, & Guedes 2954* (Ld); *Kubitzki, Calderón, & Poppendieck 79-91* (W--2917261). Bahia: *Duarte 6070* [Herb. Jard. Bot. Rio Jan. 113027] (Mi, W--2928661); *Harley, Mayo, Storr, Santos, & Pinheiro in Harley 17980* (Ld, N). Maranhão: *Jangoux & Bahia 185* (N); *Rosa & Villar 2781* (N, N). Pará: *Cid, Mota, Ramos, & Rosas 2246* [Herb. Inst. Nac. Pesq. Amaz. 96487] (N, N, W--2988103); *Martinelli 6818* [RB Herb. 203422] (Ld); *Plowman, Davidse, Rosario, & Santos 9122* (Ld, N, W--2967844); *Prance & Pennington 1746* (W--2602078). MOUNTED CLIPPINGS: Körn. in Mart., Fl. Bras. 3 (1): 302. 1863 (W).

TONINA FLUVIATILIS f. *OBTUSIFOLIA* Mold.

Additional bibliography: Hocking, Excerpt. Bot. A.23: 389. 1974; Mold., Phytologia 38: 202. 1978; Mold., Phytol. Mem. 2: 123 & 626. 1980.

TONINA FLUVIATILIS f. *PARVIFOLIA* Mold.

Additional bibliography: Hocking, Excerpt. Bot. A.23: 389. 1974; Mold., Phytologia 38: 202. 1978; Mold., Phytol. Mem. 2: 120 & 626. 1980; Mold., Phytologia 54: 234 & 237. 1983.

Killip reports this plant forming mats in open marshy ground along streams at 200--275 m. altitude and found it in both flower and fruit in April. His collection was erroneously distributed and previously cited by me as typical *T. fluviatilis* Aubl. On the other hand, *Cremers 5372, Granville 3186* and *Raynal-Roques 19741*, distributed as f. *parvifolia*, are better regarded as merely slightly smaller-leaved forms of typical *T. fluviatilis* Aubl., not nearly small enough to qualify as representative of the present form.

Additional emended citations: COLOMBIA: Chocó: *Killip 35273* (N, S, W--1772008).

WURDACKIA Mold.

Additional bibliography: Rouleau, Guide Ind. Kew. 200 & 270. 1970; Giulietti, Bol. Bot. Univ. S. Paulo 6: 63. 1978; Mold., Phytologia 42: 208 (1979) and 45: 40 & 512. 1980; Mold., Phytol.

Mem. 2: 121 & 626. 1980; Hocking, Excerpt. Bot. A.36: 23. 1981; Badillo, Schnee, & Rojas, Ernstia 14: [Clave Fam. Pl. Sup. Venez., ed. 6] 213. 1983.

WURDACKIA FLABELLIFORMIS Mold.

Additional citations: VENEZUELA: Bolívar: *Steyermark & Wurdack 671* (Ld--photo of isotype, W--2168519--isotype, W--2407793--isotype).

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ADDITIONAL NOTES ON THE GENUS *CORNUTIA*. VII

Harold N. Moldenke

The last previous in this series of notes on this genus was published in Phytologia 41: 123--130 (1978). For a detailed explanation of the herbarium acronyms used in this and all others in my continuing series of papers, see Phytologia Memoirs 2:463--469 (1980) and Phytologia 50: 268 (1982).

CORNUTIA Plum.

Additional synonymy: *Cornutia* Gaertn. f. ex Meisn., Pl. Vasc. Gen. 2: 199 in syn. 1840.

Additional & emended bibliography: Neck., Elem. Bot. 1: 352--353. 1790; Willd. in L., Sp. Pl., ed. 4, 3 (2): 6. 1802; Gaertn. f. in Gaertn., Fruct. Sem. Pl. 3: 172--173, pl. 213. 1805; Poir. in Lam., Tabl. Encycl. Méth. Bot. 3: pl. 641 (1819) and 3: 56. 1823; Spreng. in L., Syst. Beg., ed. 16, 1: 39. 1825; Loud., Hort. Brit., ed. 1, 529 (1830) and ed. 2, 529. 1832; G. Don in Loud., Hort. Brit., ed. 3, 529. 1839; G. Don in Sweet, Hort. Brit., ed. 3, 551. 1839; Reichenb., Deutsch. Bot. [Repert. Herb. Nom.] 108. 1841; Brongn., Enum. Gen. Pl., ed. 1, 65. 1843; D. Dietr., Syn. Pl. 3: 612. 1843; Voigt, Hort. Suburb. Calc. 473. 1845; Walp., Repert. Bot. Syst. 4: 80--81 & 125. 1845; Lindl., Veget. Kingd. 664. 1846; A. L. Juss. in Orbigny, Dict. Univ. Hist. Nat. 13: 184 & 185. 1849; Brongn., Enum. Gen. Pl., ed. 2, 120. 1850; Turcz., Bull. Soc. Imp. Nat. Mosc. 36 (2): 220 & 222--223. 1863; Seem., Fl. Vit. 186. 1866; Pfeiffer, Nom. Bot. 1 (1): 64 (1873), 1 (2): 876--877 & 1671 (1874), 2 (1): 24 (1874), and 2 (2): 1569, 1570, & 1593. 1874; Maxim., Bull. Acad. Imp. Sci. St.-Pétersb. 31: 81. 1886; Durand, Ind. Gen. Phan. 321. 1888; Baill., Hist. Pl. 11: 86 & 111. 1891; Briq. in Engl. & Prantl, Nat. Pflanzenfam. 4 (3a): 135--138, 142, & 169 (1895) and 4 (3a): [381]. 1897; Post & Kuntze, Lexicon 143 & 688. 1904; D. H. Scott in Solered., Syst. Anat. Dicot. [transl. Boodle & Fritsch] 2: 1021. 1908; Urb., Symb. Antil. 4: 537. 1911; E. D. Merr., Interpret. Rumph. Herb. Amboin. 450. 1917; J. C. Willis, Dict. Flow. Pl., ed. 5, 179. 1925; Dop, Bull. Soc. Hist. Nat. Toulouse 57: 203. 1928; E. D.